a blinded audit by three physicians, RVI contributed to death in 1.2% of patients in the pre-mask period and 0.2% in the mask period ($P = .12$). Patients with RVI required more peri-transplant care (median 76 days vs. 21 days, $P < .0001$). These data suggest that requiring all individuals with direct patient contact to wear a surgical mask can reduce the incidence of RVI, particularly PIV3, during the vulnerable period following HSCT.

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Is Edentulism Associated with Lower Bacteremia and Transplant-Associated Toxicities in Patients with Multiple Myeloma?

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Objective: Previous studies suggest that edentulous (subjects without teeth) have a lower inflammatory state than non-edentulous individuals probably due to periodontal infection in non-edetulous subjects. We hypothesized that edentulous patients would have a lower incidence of bacteremia and other complications associated with autotransplantation for multiple myeloma (MM).

Methods: We conducted a retrospective case-control study of patients who received autologous hematopoietic stem cell transplantation (AHSCT) for multiple MM at the Audie L. Murphy Memorial Veterans Hospital Bone Marrow Transplant Unit, in San Antonio, Texas from January 2003 through September 2012. Case subjects were defined as edentulous and controls were defined as non-edentulous. The 2 groups were matched for age, gender, ethnicity, MM stage, time from diagnosis to transplant, performance status, and conditioning regimen. The following posttransplant toxicities were analyzed: bacteremia, oral mucositis, nausea/vomiting, diarrhea, neutrophil engraftment and length of hospital stay.

Table 1
Post-AHSCT patient toxicities

	Edentulous N=45	Control Group N=90	*P*-value
Bacteremia, n (%)			0.553
Yes	11 (24)	18 (20)	
No	34 (76)	72 (80)	
Oral mucositis, n (%)			0.465
Grade 0	13 (29)	33 (37)	
Grade 1	16 (36)	21 (23)	
Grade 2	13 (29)	27 (30)	
Grade 3	3 (7)	9 (10)	
Nausea/Vomiting, n (%)			0.744
Grade 0	4 (9)	7 (8)	
Grade 1	24 (53)	40 (44)	
Grade 2	14 (31)	36 (40)	
Grade 3	3 (7)	7 (8)	
Diarrhea, n (%)			0.095
Grade 0	6 (13)	10 (11)	
Grade 1	7 (16)	17 (19)	
Grade 2	15 (33)	24 (27)	
Grade 3	14 (31)	39 (43)	
Grade 4	3 (7)	0 (0)	
Days to ANC engraftment			0.966
Mean (SD)	10.84 (1.80)	10.83 (1.16)	
Range	8-31	9-17	
Length of hospital stay (days)			0.098
Mean (SD)	15.76 (4.94)	17.47 (5.99)	
Range	3-30	3-52	

Results: During the study period, 297 AHSCT were performed at our institution. Of these, 45 (15%) patients were found to be edentulous at the time of first AHSCT. Forty-five case subjects were matched to 90 controls. All patients were males, their median age was 60 years (range, 42-75), their Karnofsky performance status score mean was 90 (range, 70-90), and all received melphalan as part of the conditioning regimen. The majority of patients, 90 (67%) had stage III MM at transplantation and the median time from diagnosis to transplantation was 12 months (range, 4-103).

The incidence and severity of all posttransplant toxicities analyzed were similar in both groups (see Table 1). Thirty-eight (84%) of edentulous patients were smokers or had a history of smoking at the time of AHSCT compared to 58 (64%) of the control group ($P = .016$). Overall survival after transplant was similar in both groups.

Conclusions: The incidence of toxicities after AHSCT experienced by edentulous MM patients was similar to controls including bacteremia and oral mucositis. There was a strong association between edentulism and smoking.

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Polymicrobial and Multiple Microbiologically Proven Infections in HSCT Recipients

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Microbiologically confirmed infections (MCI) which occur during stem cell transplantation (HSCT) increase morbidity and mortality. HSCT recipients who develop polymicrobial or multiple microbiologically confirmed infections (MMCI) may be at increased risk for unfavorable outcomes, yet data is limited. Herein we report the incidence, risk factors and survival associated for polymicrobial and multiple microbiologically confirmed infections (MMCI) in 901 HSCT recipients.

Electronic databases were used for HSCT recipients treated at Northwestern Memorial Hospital between 2004-09. Infection data was recorded from the time of admission through discharge. Any single CONS or VRE BAL culture was excluded from analysis. Patients received acyclovir, azole antifungal, and flouroquinolone for prophylaxis. Polymicrobial infection was defined as the occurrence of 2 MCI's from different organisms within 72 hours of the 1st positive culture. Fischers Exact test and Chi-Square was used for analysis of continuous and discreet variables. This study is IRB approved.

Amongst 905 HSCT recipients, 59 patients (6.8%) developed MMCI's. Polymicrobial infection was identified in 30 (3.4%) patients. 17 patients had > 2MCI's. Most MCI's (55%) were blood stream infections. The duration of time which transpired between positive cultures was as follows: Concommitant cultures (n=13), <24 hr (n=9), 48 hr (n=8), <72 hr (n=5), <96 hr (n=4), <120 hr (n=3), <144hr (n=5), >7 days(n=12). When MMCI'S cases were compared to patients without any positive cultures using bivariate analysis, statistically significant differences included : female gender (0.0377), diagnosis of myeloma ($P < .0133$) or AML ($P < .0497$), receipt of allo-HSCT ($P < .0001$), vancomycin ($P < .0004$)or cefepime($P < .0005$) use, and positive VRE